

# Does Firms Size Matter? An Empirical Evidence from Non-Financial Institutions (NFIS) Listed on the Ghana Stock Exchange (GSE)

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## ABSTRACT

The aim of this research was to explore the connection between the firm size and the profitability of Ghana Stock Exchange (GSE) listed non-financial companies. The research used panel data obtained from 15 listed non-financial firms' audited annual reports for the period 2010 to 2017. The descriptive and inferential procedures of data analyses through the use of STATA version 15 software package with a 5% level of significance ( $p \leq 0.05$ ), was adopted for the study. The research evaluated the company's profitability through Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS), while the company's size (SZ) was the natural log of total assets. The Pearson Product-Moment Correlation analysis was adopted for the study. The results of the study indicated that there was a positive but insignificant association between firm size (SZ) and the profitability of the companies as measured by ROA. Again, profitability proxied by ROE had insignificant negative affiliation with firm size (SZ). Finally, profitability measured by earnings per share (EPS) had a significant negative connection with the firm size (SZ). There is a need for companies to improve their profitability in the essentials of client base, net assets, sales volume, and market share to boost their size. Increasing the size of the companies will not only increase them in terms of profitability but will also help them achieve a competitive advantage over others as bigger companies are anticipated to be more effective than their lower counterparts and have better funds to survive financial downturns.

**KEYWORDS:** Firm size, Profitability, Ghana Stock Exchange, Non-financial Institution

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## 1. INTRODUCTION

Understanding the factors leading to some companies being more competitive than others and thus attaining higher profitability than their competitors is a topic of interest not only for scholars but also for corporate executives. It is widely believed that the effect of firm size on company performance is ambiguous, with some studies finding an adverse connection and others reporting either a positive association or no significant relationship. The size of a firm is generally classified into small, medium or large companies. Empirical reviews have shown that a larger firm is more profitable as compared to smaller firms as they enjoy economies of scale and other comparative advantages. According to Nanik and Halim (2017), explore the association between leverage change, size, market to book ratio, transaction cost and interest rate after merger or acquisition by Indonesia companies. Size, as used to measure the profitability of the companies, had an insignificant association with the profitability of the companies listed on the Indonesian stock market. Similarly, Kimondo, Irungu and Obanda (2016) research on 50 Kenyan firms. Size has been a control variable indicated an insignificant connection with

the firm's financial performance as measured by ROE. Also, Opoku (2015) in Ghana studied the liquidity management and profitability of 33 companies listed on the Ghana Stock Exchange (GSE). Firm size has been a control variable had no significant influence on the profitability of the study firms.

However, Mohammed and Yusheng (2019) explore the link between firm size and financial performance of listed companies in Ghana. Their studies finding indicated that firm size had a significant positive connection with the profitability of the firms. Chin, Muhammad, Amran, Sang and Owee (2016) also, find a positive affiliation between firm size and financial performance of companies in Malaysia manufacturing firms. finally, according to Ogbeide and Akanji (2018) find no association between firm size and financial performance of insurance companies in Nigeria. The association between firm size and firm's profitability and performance have been studied both in developed and developing countries but there is no clear link between them. Considering the extensive literature on the affiliation of firm size on firm profitability in developed countries and

other emerging markets, there are few works of literature, especially in the non-financial institutions, in the context of Ghana. Therefore, this study extends the empirical literature on the firm size in Ghana by examining the afflation between firm size and profitability of non-financial institutions (NFIs) in Ghana, especially those listed on the Ghana Stock Exchange. Also, most of the research used firm size as a control variable in the measurement of firm profitability but this study employed size as the dependent variable to measure profitability.

### 1.1. PURPOSE OF THE RESEARCH

This study's primary objective was to investigate the connection between firm size and the profitability of the Ghana Stock Exchange (GSE) listed non-financial companies. Finding of this research will benefit the scholarly community as it will add the afflation between firm size and the profitability of companies to the current pool of literature. This serves as reference material for learners and scientists who may wish to carry out further research on this subject. The research specifically aims to:

- A. Establish the afflation between size and the firms' profitability as measured by ROA.
- B. Examine the relationship between size and the firms' profitability as measured by ROE.
- C. Explore the link between size and the firms' profitability as measured by ROCE.

### 1.2. RESEARCH HYPOTHESIS

Without testing some research hypotheses, the aim of this study could not be achieved. Therefore, the following hypothesis was formulated, based on the purpose of the study, to help direct the focus of the study;

- H01: Firm size has no significant relationship with the firms' profitability as measured by ROA.
- H02: Firm size has no significant association with the firms' profitability as measured by ROE.
- H03: Firm size has no significant affiliation with the firms' profitability as measured by EPS.

## 2. EMPIRICAL REVIEW

In Thailand, Vithessonthi and Tongurai (2014) conducted a research on an extensive data collection of all licensed companies in Thailand to investigate whether company size impacts the relationship between leverage and working efficiency during the 2007–2009 worldwide economic crisis. From a data set of 496,430 company-year observations from a sample of 170,013 mostly private firms, the study finding indicated that the magnitude of the leverage effect on operating performance is non-monotonic and dependent on firm size. While the findings of the panel regression indicate that leverage has an adverse impact on efficiency across sub-samples of company size, the assessment further proposed that cross-sectional regression findings demonstrate that the impact of leverage on output is good for tiny companies and bad for big companies' year-by-year.

Shiu, Chiao, and Ming (2019) researched distinct size threshold structures on firm performance. The study collected data from 40 Taiwanese biotech sector companies over the period 2008–2017. While size extension and performance have an inverse U-shaped connection, the findings indicate that size development is detrimental to company performance. Chin, Muhammad, Amran, Sang and Owee (2016) researched the effect on the performance of

Malaysian manufacturing companies of capital structure and inner governance processes. The research used data from 183 companies listed on Bursa Malaysia between 2007 and 2010. Size had a significantly positive impact on the performance of the companies from the findings of the study.

In Indonesia, Nanik and Halim (2017) examined the impact on the profitability of bidder businesses listed on the Indonesian Stock Exchange of leverage change, size, market to book ratio, transaction cost and interest rate after merger or acquisition. The research employed cross-sectional data from government bidder firms for the period 2009 to 2015. Size had an insignificant impact on the profitability of bidder companies as measured by ROA or ROE from the multiple regression assessment of the study. Muhammad, Zheng, and Sadaf (2017) investigated the impact of free cash flow on the profitability of the Karachi Stock Exchange (KSE) listed companies. For the research, data collected from 580 listed companies' annual reports for the period 2010 to 2014 was used. Size had a considerably beneficial effect on the profitability of companies as measured by ROCE from the regression analysis of the study.

The profitability determinants of nationalized banks in Bangladesh for the period 2010 to 2014 were examined by Majumder and Uddin (2017). The size was significantly inversely correlated with the profitability of the banks as measured by ROA from the empirical outcomes of the study. The factors that determined the economic performance of 13 life insurance companies in India were evaluated by Dey, Adhikari, and Bardhan (2015). Size had a significantly positive impact on the financial performance of the companies as measured by ROE from the multiple regression model of the study. Shehryar (2017) researched the impact of capital structure on Italian firms' economic performance. The research was based on a nine (9) year annual panel data of 50 companies listed on the Borsa Italian for the period 2007 to 2015. The control variable size measured by the total asset log had a significantly positive link with the economic performance of the companies as measured by ROA and ROE from the studies analysis.

In Kenya, Kimondo, Irungu, and Obanda (2016) investigated the impact of liquidity on the Nairobi Securities Exchange's economic results of non-financial companies. For the research, secondary data obtained from 39 listed non-financial firms audited annual reports for the period 2010 to 2014 were used. The control variable size had an insignificant influence on the financial performance of the companies as measured by ROA from the multivariate regression estimates of the study. For the period 2006 to 2013, Al-Jafari and Al Samman (2015) explored the profitability determinants of 17 industrial companies listed on the Muscat Securities Market. Size had a significantly positive impact on the profitability of the companies as measured by profit margin and ROA from the ordinary least square regression assessment of the study. The research found that, with effectively managed assets, big increasing companies improved income and eventually increased profitability.

Mohammed and Yusheng (2019) study the association between firm size and the financial performance of companies listed on the Ghana Stock Exchange (GSE) for the period ranging 2008-2017. Size had a statistically significant

positive association with the financial performance of the companies as measured by ROA from the correlation estimates of the study. However, an insignificantly negative connection was also discovered between size and the ROE and ROCE of the companies. Ogbeide and Akanji (2018) looked at the link between cash flows and Nigerian insurance companies' economic performance. Data from the time series of twenty-seven (27) listed insurance companies were used for the study, for the period 2009 to 2014. The control variable size had a negligible influence on the economic performance of the companies through the OLS regression analysis.

Opoku (2015) evaluated the effect of liquidity management on the profitability of companies listed on the Ghana Stock Exchange. Annual audited financial data of 33 companies listed on the Ghana Stock Exchange between 2005 to 2009. The size of is the control variable had no significant effect on the profitability of the firms from the regression analysis of the study. In Morocco, Amraoui, Ye, Shinta, and Hapzi (2017) researched the capital structure impact on the performance of 53 Moroccan companies. The research used panel data from the Casablanca Stock Exchange and the Moroccan

Capital Markets Authority for the period 2014 to 2016. From the minimum square regression analysis panel of the study, size had a significantly positive impact on the ROE of the companies, but the adverse impact on the ROA of the companies.

Laura, Gonzalo, Anusha and Panizza (2019) research the link between corporate debt, firm size and financial fragility in emerging markets. The study period was from 1992-2014, the study uses all non-financial firms a worldwide total of 7972 firms. The finding of the research shows that firm size plays an important role in the connection between leverage, firms' fragility and exchange rate movements in emerging markets. Alhassan and Erasmus (2017) study the association between capital structure and firm's financial performance of Non-Bank Financial Institutions listed on the Ghana Stock Exchange for the period 2006-2001. A total of 42 firms were the sample for the study analysis. From the studies Pearson correlation analysis, firms' size been a control variable had a statistically positive connection with firms' financial performance measured by return on asset (ROA) and return on equity (ROE).

### 2.1. CONCEPTUAL MODEL

For this research, the following conceptual model was created based on the variables described in works of literature, which explains diagrammatically how firm size affects the profitability of companies.



### 3. RESEARCH METHODOLOGY

This study adopted the quantitative investigation. The quantitative research method has been adopted as it develops and employs phenomenal related mathematical models, theories and hypotheses (Mesly, 2015). The method has also been used because, by generating numerical data or data that can be transformed into usable statistics, it quantifies a problem; it uses measurable data to formulate facts and uncover patterns in research; and its data collection methods are much more structured than qualitative data collection methods (DeFranzo, 2011).

A research design is a collection of processes and methods used in the collection and study of measurements of issues recognized in a research problem, according to Creswell (2012). This study was quantitative research. The quantitative research technique was adopted because; it enabled a larger subject of topics to be studied, thereby improving the generalization of outcomes; and its experiments could be replicated or repeated owing to their elevated accuracy (McNabb, 2008; and Singh, 2007). This research was specifically correlated in nature as it attempted to measure two or more variables and evaluate the statistical connection (association) between them with little or no attempt to control or manipulate exogenous (predictor) variables (Pelham, Carvallo & Jones, 2005). The research was also panel or longitudinal in nature because the sample was followed over time and repeated observations were made.

The population and sampling for this study were all non-financial companies listed on the Ghana Stock Exchange between the period ranging from 2010-2017. Purposive and judgmental sampling technique was used to select the best companies that suit for the study. Totally fifteen (15) companies as the sample for the study out of that total twenty-eight non-financial companies. The filter was done through dropping for companies' financial statements was not audited, different currency than that of the Ghana cedi and also suspended firms. To explore the association between firm size and firm's financial performance the Pearson Product-Moment Correlation Coefficient technique was adopted for this study.

Also, the descriptive statistics of the mean, standard deviation, variance, maximum and minimum, their skewness and kurtosis were also considered. All the data analysis was carried out using the statistical software package STATA version 15.



**3.1. DESCRIPTION OF VARIABLES AND MEASUREMENT****Table1. Summary of variables used and their specification.**

Variables	Legend	Measurement	sign
Return on Asset	ROA	Net income/total assets	+
Return on equity	ROE	Net profit (before taxes)/total Equity	+
Earnings per share	EPS	Net income/number of shares outstanding	+
Size	SZ	Natural logarithm of total assets	+

**4. RESULTS AND DISCUSSIONS****Table2. DESCRIPTIVE ANALYSIS**

Variable	Obs	Mean	Standard deviation	Minimum	Maximum
ROA	120	-0.545926	0.77755083	-7.742179	0.4071967
ROE	120	0.2174258	1.312449	-4.68638	12.7217
EPS	120	0.0944083	0.6367038	-5.93	1.75
FSZ	120	6.3122857	1.1362857	4.378107	8.532541

Nick (2007), a descriptive statistic is a summary statistic that quantitatively defines or summarizes data collection characteristics. Descriptive statistics are distinguished from inferential statistics because they are not developed based on probability theory and are often non-parametric in nature. As indicated in table 2, the non-financial institutions in Ghana had a ROA means of -0.545926, the standard deviation of 0.77755083, minimum and maximum values of -7.742179 and 0.4071967 respectively. Non-financial companies in Ghana are able to generate 54.59% as a result when the companies put their assets into efficient and effective production. Also, the firm's ROE had a mean of 0.21774258, the standard deviation of 1.312449 and minimum and maximum figures as -4.68638 and 12.7217 respectively. As a measure of shareholder's capital investment, the non-financial firms generated 21.74% for its shareholders. However, EPS has a mean of 0.0944083, a standard deviation of 0.6367038 and with minimum and maximum -5.93 and 1.75. Finally, the size of the study firms had a mean value of 6.3122857, a standard deviation of 1.1362857 and with their minimum and maximum values as 4.378107 and 8.532541.

**Correlation analysis**

To explore the link between firm size (SZ) and the financial performance of the firms, the Pearson Product-Moment Correlation Coefficient data analysis technique was adopted. From table 3, indicated that firm size had a positive association with the ROA of the study firms but was statistically insignificant at a 95% confidence interval ( $r=0.0066$  ( $p=0.9431>0.05$ )). The positive connection between firm size (SZ) and return on asset (ROA) suggests that an increase in a firm size leads to an increase in the financial performance of the study firms. also, a decrease in firm size leads to a decrease in the ROA of the study firms. the weak link that exists between firm size and returns on assets (ROA) can be explained by the coefficient ( $r^2=0.0004356$ ) this shows that SZ accounted for 0.04 percent of ROA variants and ROA accounted for 0.004 percent of SZ differences. Other factors that were not component of the research may be credited to the unexplained differences [ 99.56 percent ( $1-r^2=0.995635$ )].

**Table3. Correlations of firm size with the Firms' Financial Performance**

	ROA	ROE	EPS	SZ
ROA	1.0000			
ROE	0.0466 (0.6134)	1.0000		
EPS	0.0802 (0.341)	0.0626 (0.4967)	1.0000	
SZ	0.0066 (0.9431)	-0.0182 (0.8436)	-0.2400 (0.0083) *	1.0000

The research also found an insignificantly negative link between SZ and ROE at a significant level of 5% [ $r=-0.0182$ , ( $p=0.8436$ ) $>0.05$ ]. While the connection between SZ and ROE was not statistically significant, their weak correlation implies that an increase in SZ resulted in a decrease in ROE and vice versa, and a reduction in SZ also resulted in a rise in ROE and vice versa. The degree of connection between SZ and ROE is substantiated by the determination coefficient ( $r^2=0.00033$ ), which demonstrates that SZ accounted for 0.033% of ROE variations and ROE accounted for 0.033% of SZ variations. Possibly other variables that did not form part of the research accounted for the unexplained differences [ $1-r^2=0.99967$  (99.97%)]. Finally, at  $\alpha=5\%$  [ $r=-0.2400$ , ( $p=0.0083$ ) $<0.05$ ] was developed a statistically strong and weak connection between SZ and EPS. The negative link between SZ and EPS is an indication that a rise in SZ has resulted in a fall in EPS and vice versa. The degree of connection between SZ and EPS can also be justified by the determination coefficient ( $r^2=0.00576$ ), which suggests that

EPS accounted for 5.76 percent of the differences in SZ and SZ described 5.76 percent of the differences in EPS.

**5. DISCUSSION OF RESULT AND TEST OF HYPOTHESIS**

This aspect of the study deals with the results of the research. The debates are performed in connection with the evaluation of appropriate literature and are displayed in the order; the relationship between SIZE and the financial performance of the companies as measured by ROA; the association between SIZE and the financial performance of companies as measured by ROE; and the affiliation between SIZE and the financial performance of companies as measured by EPS. Each subsection finishes its hypothesis test.

**5.1. The connection between size and firms' financial performance as measured by ROA.**

The study's findings size had a positive but insignificant link with the ROA of the study firms. **Hypothesis one testing: Firm size has no significant relationship with the firms' profitability as measured by ROA.** The insignificantly positive relationship between SIZE and the company's ROA was found at a significant level of 5% [ $r=0.0066$  ( $p=0.9431>0.05$ )]. Therefore, the research recognized the null hypothesis (H01) that, as measured by ROA, there was

an insignificant association between SIZE and the financial performance of the companies and found that SIZE had an insignificantly positive connection to the profitability of the firm's measured by ROA. The findings of this study support that of Alhassan and Erasmus (2017) whose study the capital structure and non-financial institution's performance in Ghana. Find a positive association between size and the firm's financial performance measured by ROA, with size as a control variable. Also, in Kenya, Kimondo, Irungu, and Obanda (2016) investigated the impact of liquidity on the Nairobi Securities Exchange's financial performance of non-financial companies. For the study, the control variable size had an insignificant influence on the financial profitability of the companies as measured by ROA. However, this study does not agree with the work of Al-Jafari and Al Samman (2015) whose study the profitability elements of 17 industrial companies listed on the Muscat Security Market. Size measured by ROA had a significant positive connection with the profitability of the companies studied.

### 5.2. The association between firm size and financial performance measured by ROE.

The study uncovered an insignificant and negative association between firm size and the firm's financial performance as measured by ROE at a 95% confidence level ( $r = -0.0182$  and  $p = 0.8436$ ). **Hypothesis two testing: Firm size has no significant association with the firms' profitability as measured by ROE.** Therefore, the null hypothesis that there is no significant association between firms size (SZ) and the firm's profitability as measured by ROE is accepted and the alternative hypothesis is rejected. The results of this study support the work of Kimondo, Irungu, and Obanda (2016) whose find an insignificant connection between size and ROE of listed firms in Kenyan. However, other studies are inconsistent with our findings. Mohammed and Yusheng (2019) find a significant and positive association between firms size and the firm's financial performance of listed companies in Ghana. Alos, Shehryar (2017) whose research on 50 listed firms on Borsa Italiana, revealed a significantly positive link between SIZE and the firms' financial performance as measured by ROE.

### 5.3. The affiliation between firm size and profitability as measured by EPS.

Finally, the study revealed a negative but significant relationship between firm size (SZ) and the firm's profitability as measured by EPS [ $r = -0.2400$ , ( $p = 0.0083$ )  $< 0.05$ ]. **Hypothesis three testing: Firm size has no significant affiliation with the firms' profitability as measured by EPS.** The study, therefore, failed to accept the null hypothesis that there is no significant affiliation between firm size (SZ) and the firm's profitability as measured by earnings per share (EPS).

## 6. CONCLUSION

The objective of this research was to examine the connection between the firm size and the profitability of the Ghana Stock Exchange (GSE) listed non-financial companies. The study's purpose was to achieve three objectives: a. Establish the affiliation between size and the firms' profitability as measured by ROA. b. Examine the relationship between size and the firms' profitability as measured by ROE. c. Explore the link between size and the firms' profitability as measured by ROCE. For the study, panel data extracted from 15 listed non-financial firms audited annual reports for the

period 2010 to 2017. From the study results of the Pearson Product-Moment Correlation Coefficient analysis firm size (SZ) had a weak positive association with the profitability of the firms measured by return on assets (ROA). Also, firm size (SZ) had insignificant and an adverse affiliation with the profitability of the study firms measured by ROE. Finally, there exit an insignificant and negative link between firm size (SZ) AND earning per share (EPS) of the studied companies. The researches recommend that managers should consider efficient and effective management of the assets of the firms. thought there was an insignificant positive association between SZ and ROA, proper management of assets would increase the profitability of the companies.

## 7. LIMITATIONS OF THE STUDY

The research was limited to just 15 listed non-bank financial intuitions listed on the Ghana Stock Exchange (GSE). Therefore, to include all listed and non-listed businesses in the country, it is not feasible to generalize the study results. Again, the researchers used ROA, ROE, and EPS as a measurement of profitability. Other studies can be conducted by using different profitability measurements. The study depended solely on the annual accounts of the firms published by the Ghana Stock Exchange (GSE). The study, therefore, bore all inherent limitations in published accounts. Although the information used for the studies was also verifiable as it came from data released by GSE, it could still be prone to time deficiencies as the study was limited to the period 2010-2017. A longer duration of the study might have captured periods of variable profitability, providing a wider dimension to the research problem. However, from 2010 to 2017, the only available data on the Ghana Stock Exchange (GSE) was regarded as credible and accurate by researchers to be helpful for the studies.

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